May 2010

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

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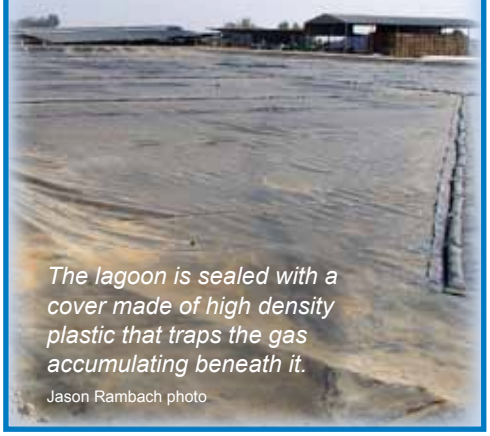
Cal-Denier Dairy

"It reduces greenhouse gasses and promotes cleaner air and water."

- Dan Taverner
NRCS District Conservationist

Fred Denier (above right) powers up Sacramento County's first dairy digester. Sacramento Municipal Utility District photo



The lagoon is sealed with a cover made of high density plastic that traps the gas accumulating beneath it.
Jason Rambach photo

The cows on **Fred Denier's** dairy are producing something more than milk -- they're making juice. That's juice as in electrical power.

The Cal-Denier Dairy in Galt, Calif. has a deal with the Sacramento Municipal Utility District (SMUD) to capture methane gas from cow manure to generate electricity.

Cow manure was washed into the dairy lagoon before being covered. Jason Rambach photo

The deal is one in a wave of new agreements in California aimed at boosting the state's use of renewable energy by harnessing the power of cow pies.

The benefits are threefold: Consumers get a new source of clean energy, farmers get a new source of revenue and methane, a greenhouse gas that contributes to global warming, is kept out of the atmosphere and put to good use.

Manure is washed into covered lagoons where microbes digest it, releasing methane gas. The gas is burned in small turbines to generate electricity, which the farm sells back to SMUD, who redistribute the power to customers. The utility says it takes the output of five to 10 cows to power one household.

The potential is big for turning methane into electricity. Most of California's 1.7 million dairy cows reside in the San Joaquin Valley, where they power a $4 billion-a-year milk and cheese industry. California utility companies are aggressively seeking alternative sources of energy, driven by a state mandate to boost their reliance on renewable power sources.

Denier said SMUD's desire to buy cow power was key to his interest in building the methane-capture system, partly because the agency shared some of the cost of installing it. Funds also came from the USDA Natural Resources Conservation Service (NRCS), USDA Rural Development, the California Energy Commission and Western United Resource Development.

NRCS District Conservationist **Dan Taverner** says surveying the site, reviewing the design of the structure and giving quality assurance during construction were all provided by NRCS because the project addresses water and air quality issues. Instead of having methane go into the atmosphere, it is captured and converted into energy. It reduces greenhouse gasses and promotes cleaner air and water.